

REMARKS/ARGUMENTS

The present response to the official action of March 9, 2005, follows a prior response which was filed on December 8, 2004, responsive to the rejection of September 8, 2004. Applicant initially apologizes for the typographical error in his prior response. While it is clear that applicant's arguments were all directed to the Shulze reference which was the subject of the official action of September 8, 2004, applicant's counsel inadvertently referred to U.S. Patent No. 6,361,206, which is not the Shulze patent, but the previously cited Bonne reference. Applicant therefore takes this opportunity to clarify the record in response to the final rejection of March 9, 2005, to set forth a minor amendment to claim 14, and to repeat and expand upon the arguments demonstrating the patentability of the present claims over Shulze.

The present invention as exemplified by the claims pending in this application is directed to an invention which is vastly different from that in the cited Shulze patent. This invention is directed to apparatus for measuring properties of a fluid with a sensor by direct contact of the sensor with that fluid. In accordance with the present invention, this is done without the sensor protruding directly into the tube through a lateral access opening in the tube, but instead by forming the tube in a dome-shaped environment, by providing a lateral access opening in the outer wall of the tube, and by sealingly disposing the sensor on the sealing surface of the outside wall of the tube surrounding the lateral access opening, again for direct contact of the sensor with the fluid in the tube to sense the desired properties. No such device is shown or even suggested by Shulze.

To the contrary, Shulze is specifically directed to a

physiological pressure transducer employed in a specific environment for a specific purpose. Thus, the background section of Shulze discusses the history of physiological blood pressure monitoring devices, and eventually concludes that the development of disposable transducers suffers from various drawbacks which are allegedly overcome by the invention of a reusable transducer portion and a one-time-use disposable dome for sterile exposure to a patient. Referring, for example, to FIG. 1 of Shulze, it can thus be seen that the pressure transducer assembly thereof includes two major parts; namely, a reusable portion 2 and a disposable portion or dome 7. The sensor in this case is a pressure sensor chip 4 disposed in the reusable portion 2 and intentionally separated from any contact with fluid flowing in the tube-shaped portion of the disposable portion 7 from inlet port 8 to outlet port 9. Thus, between the sensor 4 and the fluid the first chamber 10 includes an isolating gel 11 which itself is in contact with the flushing fluid passing from inlet 8 to outlet 9. The gel itself is then in contact with a diaphragm 12 covering a second chamber 13 in reusable portion 2. The diaphragm 12 is bonded to an annular ring 14 surrounding a recessed surface of the reusable portion, and the second chamber 13 includes a pressure transmitting medium 14 for transmitting pressure finally to the chip 4.

In the latest official action, claims 14-27 have been rejected as being anticipated by Shulze. The Examiner's position basically has been that Shulze teaches a tube for retaining fluid which includes an outer wall, a lateral access and a dome portion including a sealing surface on the outside wall of the tube surrounding the lateral access opening, and a sensor sealingly disposed on the sealing surface surrounding the lateral access in the tube, merely citing FIGS. 1, 2, 5 and 6 thereof. After recognizing that applicant incorrectly referred to the patent of the previously cited Bonne reference, the Examiner states that Shulze teaches a dome-shaped figure,

referring to the definition in Webster's Dictionary as a structure resembling a dome or an upward ceiling which is clearly said to be demonstrated in Shulze. The Examiner contends that Shulze is now considered admitted prior art. This rejection is respectfully traversed in view of the above amendments and arguments and for the reasons set forth hereinafter.

Applicant submits that the issue in this case is not whether Shulze includes a "dome." More importantly, claim 14 itself requires a tube which includes an outer wall, a lateral access opening in that wall, and a dome portion; i.e., "of the tube." However, even if this can be considered to correspond to the entire disposable portion 7 in FIG. 1 of Shulze, it does not provide a legitimate basis for the Examiner's contention that Shulze somehow renders the present claims unpatentable, much less anticipated. The claims go on to require a sensor which is sealingly disposed on the sealing surface surrounding the lateral access opening in the tube for direct contact with the fluid in the tube. The sensor used in Shulze is clearly not sealingly disposed on the sealing surface surrounding the lateral access opening in the tube. The pressure sensor chip 4 in Shulze is located in reusable portion 2, affixed to the floor of second chamber 13 disposed over vent hole 16 with a sealant 17. It is not sealingly engaged to an opening in the tube in the manner required by the claims. Even more significantly, it is clear beyond question that the pressure sensor chip 4 in Shulze is not and cannot be in direct contact with the fluid; indeed, this patent teaches an entire system for preventing this from happening, including, as discussed above, first chamber 10 including isolating gel 11, membrane 12, and pressure transmitting medium 15 in second chamber 13 preventing the sensor chip 4 from ever contacting any fluid. It is clear that Shulze neither suggests nor teaches the specific apparatus of the present invention, and reconsideration and allowance of these claims is respectfully solicited.

In addition, however, little has been said about

claims 14-27. Thus, although it is clear that claim 14 patentably distinguishes over Shulze, it is even clearer with respect to these dependent claims. For example, claims 16 and 17 require that the domed portion of the tube comprise a bend in the entire tube or an outward bulge on one side of the tube. The tube in Shulze is and always remains linear, and even if the extending portion of disposable portion 7 could somehow be considered to constitute a bulge, it still remains clear that the sensor itself is not sealingly engaged to the opening or any such bulge, and in any event, the outward bulge which includes the lateral access opening would be on the opposite side of any tubular portion of Shulze if it were somehow found to exist.

It is also noted that claim 20 calls for the sensor comprising a temperature sensor, pressure sensor, flow meter, or a conductivity sensor. While it is understood that the sensor chip 4 in Shulze is a pressure sensor, the more important point is that applicant's invention is one which is applicable to sensing various properties of a fluid by direct contact with the fluid, albeit a temperature sensor, pressure sensor, or the like. This, of course, would be impossible with the device in Shulze which, since it does not contact the fluid, could not be operative for these other functions.

We would further note that claim 21 depends from claim 15, requiring that a leveled off planar portion of the tube wall on the outer side of the dome portion provides a lateral access opening, which, of course, would be opposite to any suggestion in Shulze.

It is therefore again respectfully submitted that all of the claims in this application clearly possess the requisite novelty, utility and unobviousness to warrant their immediate allowance, and such action is respectfully solicited.

With respect to the Examiner's position that Shulze is now considered admitted prior art, it certainly is admitted that Shulze constitutes prior art against this application. But applicant strenuously denies any other implications from the previous inadvertent reference to the patent number of the Bonne reference and/or to the significance of the Shulze disclosure.

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In any event, applicant's present comments are believed to clarify these facts and to establish the patentable nature of these claims. If, however, for any reason the Examiner does not believe that such action can be taken at this time, it is respectfully requested that the Examiner telephone applicant's attorney at (908) 654-5000 in order to overcome any objections at this time.

If there are any additional charges in connection with this requested amendment, the Examiner is authorized to charge Deposit Account No. 12-1095 therefor.

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Respectfully submitted,

By 

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